

## Peritoneal Dialysis

Before dialysis was available, total kidney failure meant death. Today, people with kidney failure can live because of treatments such as dialysis and kidney transplant.

### What is dialysis?

Dialysis is a way of cleaning your blood when your kidneys can no longer do the job. It gets rid of your body's wastes, extra salt and water, and helps to control your blood pressure.

### Are there different types of dialysis?

There are two kinds of dialysis. In hemodialysis, blood is pumped out of your body to an artificial kidney machine, and returned to your body by tubes that connect you to the machine. In peritoneal dialysis, the inside lining of your own belly acts as a natural filter. Wastes are taken out by means of a cleansing fluid called dialysate, which is washed in and out of your belly in cycles.

### How does peritoneal dialysis work?

A soft plastic tube (catheter) is placed in your belly by surgery. A sterile cleansing fluid is put into your belly through this catheter. After the filtering process is finished, the fluid leaves your body through the catheter.

### There are two kinds of peritoneal dialysis:

Continuous Ambulatory Peritoneal Dialysis (CAPD)

Continuous Cycling Peritoneal Dialysis (CCPD)

The basic treatment is the same for each. However, the number of treatments and the way the treatments are done make each method different.

**CAPD** is "continuous," machine-free and done while you go about your normal activities such as work or school. You do the treatment by placing about two quarts of cleansing fluid into your belly and later draining it. This is done by hooking up a plastic bag of cleansing fluid to the tube in your belly. Raising the plastic bag to shoulder level causes gravity to pull the fluid into your belly. When empty, the plastic bag is removed and thrown away.

When an exchange (putting in and taking out the fluid) is finished, the fluid (which now has wastes removed from your blood) is drained from your belly and thrown away. This process usually is done three, four or five times in a 24-hour period while you are awake during normal activities. Each exchange takes about 30 to 40 minutes. Some patients like to do their exchanges at mealtimes and at bedtime.

**CCPD** differs from CAPD in that a machine (cycler) delivers and then drains the cleansing fluid for you. The treatment usually is done at night while you sleep.

### What kind of peritoneal dialysis is best?

The type of peritoneal dialysis that is best for you depends on your personal choice and your medical condition. Your doctor will help you to choose the one that is best for you.

**What are the plusses and minuses about being on peritoneal dialysis?**

Some doctors feel that CAPD and CCPD have several benefits when compared to hemodialysis. With continuous dialysis, you can control extra fluid more easily, and this may reduce stress on the heart and blood vessels. You are able to eat more and use fewer medications. You can do more of your daily activities and it is easier to work or travel.

However, there are some problems, too. Hemodialysis may cleanse your blood more thoroughly. Also, people on peritoneal dialysis sometimes get hyperlipidemia (high levels of certain fatty substances in the blood) or peritonitis (an infection in the belly). When making a decision about the type of treatment, you should take into consideration that peritoneal dialysis is usually a daily process.

Peritoneal dialysis is not for everyone. People must receive training and be able to perform correctly each of the steps of the treatment. A trained helper may also be used.

**How are treatments paid for?**

All types of dialysis are expensive, but, for most patients, the federal government now pays 80 percent of all dialysis charges, while private insurance or state medical assistance pays the rest.

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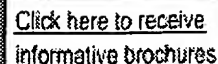

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### Peritoneal Dialysis

Peritoneal dialysis cleans the blood without it being removed. Dialysate is injected into the peritoneal space in the abdomen through a two-way catheter (the Tenckhoff catheter). The membrane that lines the abdomen (the peritoneum) allows waste and fluid to pass from the blood into the dialysate, which is pumped out. Peritoneal dialysate, made up mostly of salts and sugar (glucose), encourages ultrafiltration through the peritoneum.

About 2 weeks before dialysis begins, a Tenckhoff catheter is surgically inserted with one end in the peritoneal space, and the other extending a few inches away from the skin. This is done with general or local anesthetic, depending on patient tolerance. It remains permanently in place and is accessible any time. When not in use, the external end of the catheter is sealed.

### Two Methods Of Peritoneal Dialysis

Continuous ambulatory peritoneal dialysis (CAPD) exchanges roughly two liters of dialysate while the person is active, three to six times a day. The patient connects a bag of dialysate fluid to a catheter in the abdomen. After the dialysate filters for 4 to 6 hours, the patient exchanges it for fresh fluid.

A machine exchanges the fluid while the person sleeps during continuous cyclic peritoneal dialysis (CCPD), or automated peritoneal dialysis. The abdominal catheter is connected to the machine at bedtime. Over an 8 to 12 hour night, the machine exchanges fluid four to eight times. About 10 liters are exchanged during the night. Upon waking, the patient's fluid is exchanged and used throughout the day. Some patients require a mid-day exchange. Peritoneal dialysis must be performed everyday and fluid must be in the abdomen at all times to clean the blood adequately.

### Complications

Complications of peritoneal dialysis include the following:

- Abdominal infection
- Amyloidosis (stiffening of kidney due to protein deposit)
- Diabetes (requires blood sugar monitoring)
- Infected catheter
- Peritonitis (caused by bacterial infection of peritonium or scarring)
- Vitamin and mineral deficiencies

Some patients develop an infection an average of every 12 to 18 months and are treated with antibiotics. If the infection persists, the catheter must be removed and the patient must switch to hemodialysis. An inadequate peritoneum membrane may be unable to sufficiently clean the blood. This condition usually warrants hemodialysis.

Some patients develop diabetes mellitus or obesity from the large glucose (sugar) content of the peritoneal dialysate.

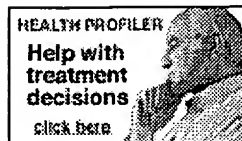
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